



## SEQUENCE LISTING

<110> de CROMBRUGGHE, BENOIT  
NAKASHIMA, KAZUHISA  
ZHOU, XIN

<120> MASTER BONE FORMATION TRANSCRIPTION FACTOR:  
COMPOSITIONS AND METHODS OF USE

<130> UTXC:666US

<140> 09/734,329

<141> 2000-11-30

<160> 50

<170> PatentIn Ver. 2.1

<210> 1

<211> 2960

<212> DNA

<213> Mus musculus

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<221> CDS

<222> (100)..(1383)

<400> 1

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Pro Lys Thr Met Gly Asp Ala Tyr Pro Ala Pro Phe Ser Ser Thr Asn
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Cys Leu Pro Ser Val Tyr Thr Ser Leu Asp Met Thr His Pro Tyr Gly	
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Ser Trp Tyr Lys Ala Gly Ile His Ala Gly Ile Ser Pro Gly Pro Gly	
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Asn Thr Pro Thr Pro Trp Trp Asp Met His Pro Gly Gly Asn Trp Leu	
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Gln Pro Gly Pro Gln His Val Leu Pro Gln Asp Val Tyr Lys Pro Lys	
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Ala Val Gly Asn Ser Gly Gln Leu Glu Gly Ser Gly Ala Ala Lys Pro	
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Pro Arg Gly Ala Gly Thr Gly Gly Ser Gly Gly Tyr Ala Gly Ser Gly	
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Ala Gly Arg Ser Thr Cys Asp Cys Pro Asn Cys Gln Glu Leu Glu Arg	
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Leu Gly Ala Ala Ala Ala Gly Leu Arg Lys Lys Pro Ile His Ser Cys	
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cac atc cct ggg tgc ggc aag gtg tac ggc aag gct tcg cat ctg aaa	1026
His Ile Pro Gly Cys Gly Lys Val Tyr Gly Lys Ala Ser His Leu Lys	
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Ala His Leu Arg Trp His Thr Gly Glu Arg Pro Phe Val Cys Asn Trp	
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Val Arg Thr His Thr Arg Glu Lys Lys Phe Thr Cys Leu Leu Cys Ser	
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Lys Arg Phe Thr Arg Ser Asp His Leu Ser Lys His Gln Arg Thr His	
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<210> 2  
 <211> 428  
 <212> PRT  
 <213> Mus musculus

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 35 40 45  
 Ala Asp Leu Ser Ala Pro Lys Thr Met Gly Asp Ala Tyr Pro Ala Pro  
 50 55 60  
 Phe Ser Ser Thr Asn Gly Leu Leu Ser Pro Ala Gly Ser Pro Pro Ala  
 65 70 75 80  
 Pro Ala Ser Gly Tyr Ala Asn Asp Tyr Pro Pro Phe Pro His Ser Phe  
 85 90 95  
 Pro Gly Pro Thr Gly Ala Gln Asp Pro Gly Leu Leu Val Pro Lys Gly  
 100 105 110  
 His Ser Ser Ser Asp Cys Leu Pro Ser Val Tyr Thr Ser Leu Asp Met  
 115 120 125  
 Thr His Pro Tyr Gly Ser Trp Tyr Lys Ala Gly Ile His Ala Gly Ile  
 130 135 140

Ser Pro Gly Pro Gly Asn Thr Pro Thr Pro Trp Trp Asp Met His Pro  
 145 150 155 160  
 Gly Gly Asn Trp Leu Gly Gly Gly Gln Gly Gln Gly Asp Gly Leu Gln  
 165 170 175  
 Gly Thr Leu Ser Thr Gly Pro Ala Gln Pro Pro Leu Asn Pro Gln Leu  
 180 185 190  
 Pro Thr Tyr Pro Ser Asp Phe Ala Pro Leu Asn Pro Ala Pro Tyr Pro  
 195 200 205  
 Ala Pro His Leu Leu Gln Pro Gly Pro Gln His Val Leu Pro Gln Asp  
 210 215 220  
 Val Tyr Lys Pro Lys Ala Val Gly Asn Ser Gly Gln Leu Glu Gly Ser  
 225 230 235 240  
 Gly Ala Ala Lys Pro Pro Arg Gly Ala Gly Thr Gly Gly Ser Gly Gly  
 245 250 255  
 Tyr Ala Gly Ser Gly Ala Gly Arg Ser Thr Cys Asp Cys Pro Asn Cys  
 260 265 270  
 Gln Glu Leu Glu Arg Leu Gly Ala Ala Ala Ala Gly Leu Arg Lys Lys  
 275 280 285  
 Pro Ile His Ser Cys His Ile Pro Gly Cys Gly Lys Val Tyr Gly Lys  
 290 295 300  
 Ala Ser His Leu Lys Ala His Leu Arg Trp His Thr Gly Glu Arg Pro  
 305 310 315 320  
 Phe Val Cys Asn Trp Leu Phe Cys Gly Lys Arg Phe Thr Arg Ser Asp  
 325 330 335  
 Glu Leu Glu Arg His Val Arg Thr His Thr Arg Glu Lys Lys Phe Thr  
 340 345 350  
 Cys Leu Leu Cys Ser Lys Arg Phe Thr Arg Ser Asp His Leu Ser Lys  
 355 360 365  
 His Gln Arg Thr His Gly Glu Pro Gly Pro Gly Pro Pro Pro Ser Gly  
 370 375 380  
 Pro Lys Glu Leu Gly Glu Gly Arg Ser Val Gly Glu Glu Glu Ala Asn  
 385 390 395 400  
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 405 410 415  
 Gly Gly Ser Pro Glu Gln Ser Asn Leu Leu Glu Ile  
 420 425

<211> 14  
<212> PRT  
<213> Mus musculus

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<210> 4  
<211> 85  
<212> PRT  
<213> Mus musculus

<400> 4  
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Ser His Leu Lys Ala His Leu Arg Trp His Thr Gly Glu Arg Pro Phe  
20 25 30  
Val Cys Asn Trp Leu Phe Cys Gly Lys Arg Phe Thr Arg Ser Asp Glu  
35 40 45  
Leu Glu Arg His Val Arg Thr His Thr Arg Glu Lys Lys Phe Thr Cys  
50 55 60  
Leu Leu Cys Ser Lys Arg Phe Thr Arg Ser Asp His Leu Ser Lys His  
65 70 75 80  
Gln Arg Thr His Gly  
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<210> 5  
<211> 244  
<212> PRT  
<213> Mus musculus

<400> 5  
Phe Gly Gly Ser Ser Pro Leu Arg Asp Ser Thr Thr Leu Gly Lys Gly  
1 5 10 15  
Gly Thr Lys Lys Pro Tyr Ala Asp Leu Ser Ala Pro Lys Thr Met Gly  
20 25 30  
Asp Ala Tyr Pro Ala Pro Phe Ser Ser Thr Asn Gly Leu Leu Ser Pro  
35 40 45  
Ala Gly Ser Pro Pro Ala Pro Ala Ser Gly Tyr Ala Asn Asp Tyr Pro  
50 55 60  
Pro Phe Pro His Ser Phe Pro Gly Pro Thr Gly Ala Gln Asp Pro Gly  
65 70 75 80  
Leu Leu Val Pro Lys Gly His Ser Ser Ser Asp Cys Leu Pro Ser Val  
85 90 95

Tyr Thr Ser Leu Asp Met Thr His Pro Tyr Gly Ser Trp Tyr Lys Ala  
 100 105 110  
 Gly Ile His Ala Gly Ile Ser Pro Gly Pro Gly Asn Thr Pro Thr Pro  
 115 120 125  
 Trp Trp Asp Met His Pro Gly Gly Asn Trp Leu Gly Gly Gly Gln Gly  
 130 135 140  
 Gln Gly Asp Gly Leu Gln Gly Thr Leu Ser Thr Gly Pro Ala Gln Pro  
 145 150 155 160  
 Pro Leu Asn Pro Gln Leu Pro Thr Tyr Pro Ser Asp Phe Ala Pro Leu  
 165 170 175  
 Asn Pro Ala Pro Tyr Pro Ala Pro His Leu Leu Gln Pro Gly Pro Gln  
 180 185 190  
 His Val Leu Pro Gln Asp Val Tyr Lys Pro Lys Ala Val Gly Asn Ser  
 195 200 205  
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 225 230 235 240  
 Cys Asp Cys Pro

<210> 6  
 <211> 166  
 <212> PRT  
 <213> Mus musculus

<400> 6  
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 20 25 30  
 Asp Ala Tyr Pro Ala Pro Phe Ser Ser Thr Asn Gly Leu Leu Ser Pro  
 35 40 45  
 Ala Gly Ser Pro Pro Ala Pro Ala Ser Gly Tyr Ala Asn Asp Tyr Pro  
 50 55 60  
 Pro Phe Pro His Ser Phe Pro Gly Pro Thr Gly Ala Gln Asp Pro Gly  
 65 70 75 80  
 Leu Leu Val Pro Lys Gly His Ser Ser Ser Asp Cys Leu Pro Ser Val  
 85 90 95  
 Tyr Thr Ser Leu Asp Met Thr His Pro Tyr Gly Ser Trp Tyr Lys Ala

100					105					110						
Gly	Ile	His	Ala	Gly	Ile	Ser	Pro	Gly	Pro	Gly	Asn	Thr	Pro	Thr	Pro	
115					120					125						
Trp	Trp	Asp	Met	His	Pro	Gly	Gly	Asn	Trp	Leu	Gly	Gly	Gly	Gln	Gly	
130					135					140						
Gln	Gly	Asp	Gly	Leu	Gln	Gly	Thr	Leu	Ser	Thr	Gly	Pro	Ala	Gln	Pro	
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Pro					Leu					Asn					Pro	
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<210> 7

<211> 85

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Peptide

<400> 7

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Ser	His	Leu	Lys	Ala	His	Leu	Arg	Trp	His	Thr	Gly	Glu	Arg	Pro	Phe
		20					25						30		

Val	Cys	Asn	Trp	Leu	Phe	Cys	Gly	Lys	Arg	Phe	Thr	Arg	Ser	Asp	Glu
		35					40					45			

Leu	Glu	Arg	His	Val	Arg	Thr	His	Thr	Arg	Glu	Lys	Lys	Phe	Thr	Cys
	50					55					60				

Leu	Leu	Cys	Ser	Lys	Arg	Phe	Thr	Arg	Ser	Asp	His	Leu	Ser	Lys	His
65					70					75					80

Gln	Arg	Thr	His	Gly
				85

<210> 8

<211> 85

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Peptide

<400> 8

Gln	His	Ser	Cys	His	Ile	Pro	Gly	Cys	Gly	Lys	Val	Tyr	Gly	Lys	Thr
1				5					10					15	



Ser His Leu Arg Ala His Leu Arg Trp His Ser Gly Glu Arg Pro Phe  
                   20                  25                  30  
 Ile Cys Asn Trp Met Phe Cys Gly Lys Arg Phe Thr Arg Ser Asp Glu  
                   35                  40                  45  
 Leu Gln Arg His Arg Arg Thr His Thr Gly Glu Lys Lys Phe Val Cys  
                   50                  55                  60  
 Pro Glu Cys Ser Lys Arg Phe Met Arg Ser Asp His Leu Ala Lys His  
                   65                  70                  75                  80  
 Ile Lys Thr His Gln  
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<210> 9

<211> 85

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Peptide

<400> 9

Gln His Val Cys His Ile Glu Gly Cys Gly Lys Val Tyr Gly Lys Thr  
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 Ser His Leu Arg Ala His Leu Arg Trp His Thr Gly Glu Arg Pro Phe  
                   20                  25                  30  
 Ile Cys Asn Trp Met Phe Cys Gly Lys Arg Phe Thr Arg Ser Asp Glu  
                   35                  40                  45  
 Leu Gln Arg His Arg Arg Thr His Thr Gly Glu Lys Arg Phe Glu Cys  
                   50                  55                  60  
 Pro Glu Cys Ser Lys Arg Phe Met Arg Ser Asp His Leu Ser Lys His  
                   65                  70                  75                  80  
 Val Lys Thr His Gln  
                                   85

<210> 10

<211> 85

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Peptide

<400> 10

Gln His Ile Cys His Ile Gln Gly Cys Gly Lys Val Tyr Gly Lys Thr  
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Ser His Leu Arg Ala His Leu Arg Trp His Thr Gly Glu Arg Pro Phe  
                   20                  25                  30  
 Met Cys Asn Trp Ser Tyr Cys Gly Lys Arg Phe Thr Arg Ser Asp Glu  
                   35                  40                  45  
 Leu Gln Arg His Lys Arg Thr His Thr Gly Glu Lys Lys Phe Ala Cys  
                   50                  55                  60  
 Pro Glu Cys Pro Lys Arg Phe Met Arg Ser Asp His Leu Ser Lys His  
                   65                  70                  75                  80  
 Ile Lys Thr His Gln  
                                   85

<210> 11  
 <211> 85  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
           Peptide

<400> 11  
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 Ser Leu Leu Arg Ala His Val Arg Leu His Thr Gly Glu Arg Pro Phe  
                   20                  25                  30  
 Val Cys Asn Trp Phe Phe Cys Gly Lys Arg Phe Thr Arg Ser Asp Glu  
                   35                  40                  45  
 Leu Gln Arg His Ala Arg Thr His Thr Gly Asp Lys Arg Phe Glu Cys  
                   50                  55                  60  
 Ala Gln Cys Gln Lys Arg Phe Met Arg Ser Asp His Leu Thr Lys His  
                   65                  70                  75                  80  
 Tyr Lys Thr His Leu  
                                   85

<210> 12  
 <211> 85  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
           Peptide

<400> 12  
 Lys His Lys Cys His Ile Tyr Ala Cys Glu Lys Val Tyr Gly Lys Ser

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20	25	30	
Ala Cys Ser Trp Gln Glu Cys Asn Lys Lys Phe Ala Arg Ser Asp Glu			
35	40	45	
Leu Ala Arg His Tyr Arg Thr His Thr Gly Glu Lys Lys Phe Ser Cys			
50	55	60	
Pro Ile Cys Glu Lys Arg Phe Met Arg Ser Asp His Leu Thr Lys His			
65	70	75	80
Ala Arg Arg His Ala			
85			

<210> 13  
 <211> 85  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Peptide

<400> 13
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Ser His Leu Lys Ala His Tyr Arg Val His Thr Gly Glu Arg Pro Phe
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Pro Cys Thr Trp Pro Asp Cys Leu Lys Lys Phe Ser Arg Ser Asp Glu
35 40 45
Leu Thr Arg His Tyr Arg Thr His Thr Gly Glu Lys Gln Phe Arg Cys
50 55 60
Pro Leu Cys Glu Lys Arg Phe Met Arg Ser Asp His Leu Thr Lys His
65 70 75 80
Ala Arg Arg His Thr
85

<210> 14  
 <211> 85  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Peptide

<400> 14

Ser His Ile Cys Ser His Pro Gly Cys Gly Lys Thr Tyr Phe Lys Ser  
 1 5 10 15  
 Ser His Leu Lys Ala His Val Arg Thr His Thr Gly Glu Lys Pro Phe  
 20 25 30  
 Ser Cys Ser Trp Lys Gly Cys Glu Arg Arg Phe Ala Arg Ser Asp Glu  
 35 40 45  
 Leu Ser Arg His Arg Arg Thr His Thr Gly Glu Lys Lys Phe Ala Cys  
 50 55 60  
 Pro Met Cys Asp Arg Arg Phe Met Arg Ser Asp His Leu Thr Lys His  
 65 70 75 80  
 Ala Arg Arg His Leu  
 85

<210> 15  
 <211> 85  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 Peptide

<400> 15  
 Asn Tyr Val Cys Ser Phe Pro Gly Cys Arg Lys Thr Tyr Phe Lys Ser  
 1 5 10 15  
 Ser His Leu Lys Ala His Leu Arg Thr His Thr Gly Glu Lys Pro Phe  
 20 25 30  
 Asn Cys Ser Trp Asp Gly Cys Asp Lys Lys Phe Ala Arg Ser Asp Glu  
 35 40 45  
 Leu Ser Arg His Arg Arg Thr His Thr Gly Glu Lys Lys Phe Val Cys  
 50 55 60  
 Pro Val Cys Asp Arg Arg Phe Met Arg Ser Asp His Leu Thr Lys His  
 65 70 75 80  
 Ala Arg Arg His Met  
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<210> 16  
 <211> 85  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 Peptide

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 Ser His Leu Lys Ala His Arg Arg Thr His Thr Gly Glu Lys Pro Tyr  
                   20                  25                  30  
 Lys Cys Thr Trp Glu Gly Cys Thr Trp Lys Phe Gly Arg Ser Asp Glu  
                   35                  40                  45  
 Leu Thr Arg His Tyr Arg Lys His Thr Gly Val Lys Pro Phe Lys Cys  
           50                  55                  60  
 Ala Asp Cys Asp Arg Arg Phe Ser Arg Ser Asp His Leu Ala Leu His  
           65                  70                  75                  80  
 Arg Arg Arg His Met  
                           85

<210> 17  
 <211> 85  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
           Peptide

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 Ser His Leu Lys Ala His Leu Arg Thr His Thr Gly Glu Lys Pro Tyr  
                   20                  25                  30  
 Lys Cys Thr Trp Glu Gly Cys Asp Trp Arg Phe Ala Arg Ser Asp Glu  
                   35                  40                  45  
 Leu Thr Arg His Tyr Arg Lys His Thr Gly Ala Lys Pro Phe Gln Cys  
           50                  55                  60  
 Met Val Cys Gln Arg Ser Phe Ser Arg Ser Asp His Leu Ala Leu His  
           65                  70                  75                  80  
 Met Lys Arg His Gln  
                           85

<210> 18  
 <211> 85  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
           Peptide

<400> 18

Ala His Thr Cys Gly His Glu Gly Cys Gly Lys Ser Tyr Ser Lys Ser  
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Ser His Leu Lys Ala His Leu Arg Thr His Thr Gly Glu Lys Pro Tyr  
20 25 30  
Ala Cys Ser Trp Asp Gly Cys Asp Trp Arg Phe Ala Arg Ser Asp Glu  
35 40 45  
Leu Thr Arg His Tyr Arg Lys His Thr Gly His Arg Pro Phe Cys Cys  
50 55 60  
Gly Leu Cys Pro Arg Ala Phe Ser Arg Ser Asp His Leu Ala Leu His  
65 70 75 80  
Met Lys Arg His Leu  
85

<210> 19

<211> 85

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Peptide

<400> 19

Thr His Thr Cys Ser Tyr Thr Asn Cys Gly Lys Thr Tyr Thr Lys Ser  
1 5 10 15  
Ser His Leu Lys Ala His Leu Arg Thr His Thr Gly Glu Lys Pro Tyr  
20 25 30  
His Cys Asn Trp Glu Gly Cys Gly Trp Lys Phe Ala Arg Ser Asp Glu  
35 40 45  
Leu Thr Arg His Tyr Arg Lys His Thr Gly His Arg Pro Phe Gln Cys  
50 55 60  
His Leu Cys Asp Arg Ala Phe Ser Arg Ser Asp His Leu Ala Leu His  
65 70 75 80  
Met Lys Arg His Met  
85

<210> 20

<211> 85

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

# Peptide

<400> 20

Val His Arg Cys His Phe Asn Gly Cys Arg Lys Val Tyr Thr Lys Ser  
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Ser His Leu Lys Ala His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr  
20 25 30

Arg Cys Ser Trp Glu Gly Cys Glu Trp Arg Phe Ala Arg Ser Asp Glu  
35 40 45

Leu Thr Arg His Phe Arg Lys His Thr Gly Ala Lys Pro Phe Lys Cys  
50 55 60

Ser His Cys Asp Arg Cys Phe Ser Arg Ser Asp His Leu Ala Leu His  
65 70 75 80

Met Lys Arg His Phe  
85

<210> 21

<211> 85

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Peptide

<400> 21

Thr His Thr Cys Asp Tyr Ala Gly Cys Gly Lys Thr Tyr Thr Lys Ser  
1 5 10 15

Ser His Leu Lys Ala His Leu Arg Thr His Thr Gly Glu Lys Pro Tyr  
20 25 30

His Cys Asp Trp Asp Gly Cys Gly Trp Lys Phe Ala Arg Ser Asp Glu  
35 40 45

Leu Thr Arg His Tyr Arg Lys His Thr Gly His Arg Pro Phe Gln Cys  
50 55 60

Gln Lys Cys Asp Arg Ala Phe Ser Arg Ser Asp His Leu Ala Leu His  
65 70 75 80

Met Lys Arg His Phe  
85

<210> 22

<211> 85

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Peptide

<400> 22

Ile His Arg Cys Asp Tyr Asp Gly Cys Asn Lys Val Tyr Thr Lys Ser  
1 5 10 15

Ser His Leu Lys Ala His Arg Arg Thr His Thr Gly Glu Lys Pro Tyr  
20 25 30

Lys Cys Thr Trp Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp Glu  
35 40 45

Leu Thr Arg His Phe Arg Lys His Thr Gly Ile Lys Pro Phe Gln Cys  
50 55 60

Pro Asp Cys Asp Arg Ser Phe Ser Arg Ser Asp His Leu Ala Leu His  
65 70 75 80

Arg Lys Arg His Met  
85

<210> 23

<211> 431

<212> PRT

<213> Homo sapiens

<400> 23

Met Ala Ser Ser Leu Leu Glu Glu Glu Val His Tyr Gly Ser Ser Pro  
1 5 10 15

Leu Ala Met Leu Thr Ala Ala Cys Ser Lys Phe Gly Gly Ser Ser Pro  
20 25 30

Leu Arg Asp Ser Thr Thr Leu Gly Lys Ala Gly Thr Lys Lys Pro Tyr  
35 40 45

Ser Val Gly Ser Asp Leu Ser Ala Ser Lys Thr Met Gly Asp Ala Tyr  
50 55 60

Pro Ala Pro Phe Thr Ser Thr Asn Gly Leu Leu Ser Pro Ala Gly Ser  
65 70 75 80

Pro Pro Ala Pro Thr Ser Gly Tyr Ala Asn Asp Tyr Pro Pro Phe Ser  
85 90 95

His Ser Phe Pro Gly Pro Thr Gly Thr Gln Asp Pro Gly Leu Leu Val  
100 105 110

Pro Lys Gly His Ser Ser Ser Asp Cys Leu Pro Ser Val Tyr Thr Ser  
115 120 125

Leu Asp Met Thr His Pro Tyr Gly Ser Trp Tyr Lys Ala Gly Ile His  
130 135 140

Ala Gly Ile Ser Pro Gly Pro Gly Asn Thr Pro Thr Pro Trp Trp Asp



145		150		155		160
Met His Pro Gly Gly Asn Trp Leu Gly Gly Gly Gln Gly Gln Gly Asp						
		165		170		175
Gly Leu Gln Gly Thr Leu Pro Thr Gly Pro Ala Gln Pro Pro Leu Asn						
		180		185		190
Pro Gln Leu Pro Thr Tyr Pro Ser Asp Phe Ala Pro Leu Asn Pro Ala						
		195		200		205
Pro Tyr Pro Ala Pro His Leu Leu Gln Pro Gly Pro Gln His Val Leu						
		210		215		220
Pro Gln Asp Val Tyr Lys Pro Lys Ala Val Gly Asn Ser Gly Gln Leu						
		225		230		240
Glu Gly Ser Gly Gly Ala Lys Pro Pro Arg Gly Ala Ser Thr Gly Gly						
		245		250		255
Ser Gly Gly Tyr Gly Gly Ser Gly Ala Gly Arg Ser Ser Cys Asp Cys						
		260		265		270
Pro Asn Cys Gln Glu Leu Glu Arg Leu Gly Ala Ala Ala Ala Gly Leu						
		275		280		285
Arg Lys Lys Pro Ile His Ser Cys His Ile Pro Gly Cys Gly Lys Val						
		290		295		300
Tyr Gly Lys Ala Ser His Leu Lys Ala His Leu Arg Trp His Thr Gly						
		305		310		320
Glu Arg Pro Phe Val Cys Asn Trp Leu Phe Cys Gly Lys Arg Phe Thr						
		325		330		335
Arg Ser Asp Glu Leu Glu Arg His Val Arg Thr His Thr Arg Glu Lys						
		340		345		350
Lys Phe Thr Cys Leu Leu Cys Ser Lys Arg Phe Thr Arg Ser Asp His						
		355		360		365
Leu Ser Lys His Gln Arg Thr His Gly Glu Pro Gly Pro Gly Pro Pro						
		370		375		380
Pro Ser Gly Pro Lys Glu Leu Gly Glu Gly Arg Ser Thr Gly Glu Glu						
		385		390		400
Glu Ala Ser Gln Thr Pro Arg Pro Ser Ala Ser Pro Ala Thr Pro Glu						
		405		410		415
Lys Ala Pro Gly Gly Ser Pro Glu Gln Ser Asn Leu Leu Glu Ile						
		420		425		430

<210> 24  
 <211> 22  
 <212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 24

attcgatcgg ggcggggcga gc

22

<210> 25

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 25

cgtagagcca caccctgaag g

21

<210> 26

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 26

ccttcagggt gtggctctag g

21

<210> 27

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 27

ttgcgggagg gggggcgcg c tgggtgga

28

<210> 28

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 28  
tccaccagc gcgcccccc tcccgcaa 28

<210> 29  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 29  
ccttcctttc cctcctcccc cctcttcg 28

<210> 30  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 30  
cgaagagggg ggaggaggga aaggaagg 28

<210> 31  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 31  
gctcgggggc ggggtctcag gtta 24

<210> 32  
<211> 24  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 32  
taacctgaga ccccgcccc gagc 24

<210> 33  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 33  
gggctccggg ggcggggtct caggtta

27

<210> 34  
<211> 27  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 34  
taacctgaga ccccgcccc ggagccc

27

<210> 35  
<211> 27  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 35  
gggctccggg ggcggggtct catttta

27

<210> 36  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 36  
taaaatgaga ccccgcccc ggagccc

27

<210> 37  
<211> 27  
<212> DNA  
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<220>  
 <223> Description of Artificial Sequence: Synthetic  
 Primer

<400> 37  
 gggctccggg ggcgttgtct caggtaa 27

<210> 38  
 <211> 27  
 <212> DNA  
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 Primer

<400> 38  
 taacctgaga caacgcccc ggagccc 27

<210> 39  
 <211> 27  
 <212> DNA  
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<220>  
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 Primer

<400> 39  
 gggctccggc ttcgggtct caggtta 27

<210> 40  
 <211> 27  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 Primer

<400> 40  
 taacctgaga ccccgaaacc ggagccc 27

<210> 41  
 <211> 27  
 <212> DNA  
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<220>  
 <223> Description of Artificial Sequence: Synthetic  
 Primer

<400> 41

gggctcatgg ggcgggggtct caggtta

27

<210> 42

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 42

taacctgaga ccccgcccca tgagccc

27

<210> 43

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 43

aggctccggg ggcgggggtct caggtta

27

<210> 44

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 44

gggctccggg ggcgggggtct caggtaa

27

<210> 45

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 45

gggctccggg ggcgggggtct catttta

27

<210> 46

<211> 27

<212> DNA  
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         Primer  
  
 <400> 46  
 gggctccggg ggcgttgtct caggtta 27  
  
  
 <210> 47  
 <211> 27  
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         Primer  
  
 <400> 47  
 gggctccggg ttcgggggtct caggtta 27  
  
  
 <210> 48  
 <211> 27  
 <212> DNA  
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 <223> Description of Artificial Sequence: Synthetic  
         Primer  
  
 <400> 48  
 gggctcatgg ggcgggggtct caggtta 27  
  
  
 <210> 49  
 <211> 27  
 <212> DNA  
 <213> Artificial Sequence  
  
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 <223> Description of Artificial Sequence: Synthetic  
         Primer  
  
 <400> 49  
 gggctccggg ggcgggggtct caggtta 27  
  
  
 <210> 50  
 <211> 27  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic

Primer

<400> 50

gggctccggg ggcggggtct caggtta

27